ABSTRACT OF THE DISCLOSURE

A method for video filtering of an input video sequence by utilizing joint motion and noise estimation comprises the steps of:(a) generating a motion-compensated video sequence from the input video sequence and a plurality of estimated motion fields;(b) spatiotemporally filtering the motion compensated video sequence, thereby producing a filtered, motion-compensated video sequence; (c) estimating a standard deviation from the difference between the input video sequence and the filtered, motion-compensated video sequence, thereby producing an estimated standard deviation; (d) estimating a scale factor from the difference between the input video sequence and the motion compensated video sequence; and (e) iterating through steps (a) to (d) using the scale factor previously obtained from step (d) to generate the motion-compensated video sequence in step (a) and using the estimated standard deviation previously obtained from step (c) to perform the filtering in step (b) until the value of the noise level approaches the unknown noise of the input video sequence, whereby the noise level is then characterized by a finally determined scale factor and standard deviation.